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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,344

06/09/2006

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EXAMINER

CHAPMAN JR, JOHN E

ART UNIT

PAPER NUMBER

2856

MAIL DATE

DELIVERY MODE

10/10/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/582,344	DELEVOYE, ELISABETH	
	Examiner	Art Unit	
	John E. Chapman	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10, 14 and 15 is/are rejected.
- 7) ☒ Claim(s) 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. ____.                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/9/06</u> .  | 6) <input type="checkbox"/> Other: ____.                          |

### DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, 5, 7 and 14 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burdess (4,655,081)

Burdess discloses a vibrating structure (30) in Fig. 7 comprising a fixing end (31), connected in secured manner to a fixed support (15), and at least one vibrating wall in which vibrations are generated and comprising a base and a free end, the vibrating wall being formed by a side wall of a hollow shell (30), wherein the fixing end (31) is formed by the base of the hollow shell. A naturally decoupled zone is inherently situated between the fixing end and the free end of the vibrating wall. Accordingly, the only difference between the claimed invention and the prior art consists in providing a micro-machined vibrating structure. Micromachining the vibrating structure is directed to a method of manufacturing the vibrating structure and fails to

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structurally distinguish the vibrating structure itself. Furthermore, it would have been obvious to manufacture the vibrating structure (30) of Burdess by micromachining, such as etching to form the thin-walled cylindrical shell (30). It is well known in the art to etch piezoelectric materials to form various structures.

4. Claims 3, 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burdess as applied to claim 1 above, and further in view of Koning (4,793,195).

Regarding claim 3, the only difference between the claimed invention and the prior art consists in providing the sidewall of the hollow shell (30) with a variable thickness. Koning discloses a vibrating structure (22) comprising a hollow shell having a variable thickness. Merely to provide the hollow shell (30) of Burdess with the shape of the hollow shell (22) of Koning would have been within the level of ordinary skill in the art. A change in the shape of a prior art device is generally considered to be a design consideration within the skill of the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Regarding claims 4 and 6, the particular shape is generally considered to be a design consideration within the skill of the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

5. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Burdess as applied to claim 1 above and further in view of Nakajima (6,151,964).

Regarding claim 8, the only difference between the claimed invention and the prior art consists in providing the base of the hollow shell (30) with an elliptical cross section instead of a circular cross section. Nakajima teaches that the shape of vibration element 1 and vibration

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element 2 is not limited to a circular ring shape, but may be an ellipse (column 4, lines 64-67). It would have been obvious to provide the hollow shell (30) of Burdess with an elliptical cross section instead of a circular cross section, and it would have been obvious that such apparatus would function in substantially the same manner to produce substantially the same results as an apparatus having a circular cross section. A change in the shape of a prior art device is generally considered to be a design consideration within the skill of the art. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

Regarding claim 9, the only difference between the claimed invention and the prior art consists in making the hollow shell (30) of Burdess from a silicon substrate. Nakajima teaches that the angular velocity sensor device can be made from any single crystal showing piezoelectricity, such as silicon (column 8, lines 59-65). Accordingly, it would have been obvious to one of ordinary skill in the art to make the hollow shell (30) of Burdess from a silicon substrate.

Regarding claim 10, the rigid flange (31) of Burdess comprises a fixed support for the vibrating structure (30).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Burdess as applied to claim 1 above, and further in view of Barnaby et al. (2,544,646).

The only difference between the claimed invention and the prior art consists in providing two symmetrically arranged vibrating structures (30) of Burdess. Barnaby et al. teaches providing vibrating structures in inverted positions in order to compensate of one another's vibrations (column 7, lines 15-30). Accordingly, it would have been obvious to one of ordinary

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skill in the art to provide a second vibrating structure (30) of Burdess in an inverted position in order to compensate for the vibrations of the first vibrating structure (30).

7. Claims 11-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

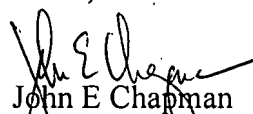
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burdess et al. (4,759,220) discloses a vibrating structure comprising a fixing end (5), connected in secured manner to a fixed support (7), and at least one vibrating wall (3), in which vibrations are generated and comprising a base and a free end, the vibrating wall being formed by a side wall of a hollow shell, wherein the fixing end is formed by the base of the hollow shell. Petri et al. discloses a vibrating gyroscope micromachined on a base, such as a crystalline silicon substrate.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John E. Chapman whose telephone number is (571) 272-2191. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
John E. Chapman  
Primary Examiner  
Art Unit 2856